

Fresh Produce Needs Across Vermont

Results from the Fresh Produce Survey



Theresa Snow, Salvation Farms

Elana Dean, Isgood Community Research, LLC

In Spring 2016, Salvation Farms administered the Fresh Produce Survey to hundreds of organizations and institutions across Vermont that serve or provide food as part of their social missions. The main goal was to understand these sites' needs and preferences for fresh produce. In total, 210 sites completed the survey, from across all 14 Vermont counties. The majority were either food shelves (42%) or public schools (28%). Other sites that responded included prisons, Meals on Wheels, and housing sites, among others.

Overall, sites have a high demand for fresh produce and want to increase the amount that they are currently providing. The average Vermont site is able to use around 620 pounds of fresh produce a week. Across all of Vermont's food shelves and schools, the annual need for fresh produce is estimated to be 14 million pounds.

Key findings from the survey also highlight sites' preferences for fresh produce. Overall, sites prefer using a wide variety of fresh produce and are not narrowly interested in a few items. In addition, sites prefer fresh produce that is grown in Vermont and fresh produce that has no blemishes, or is considered "good-looking". Many sites are

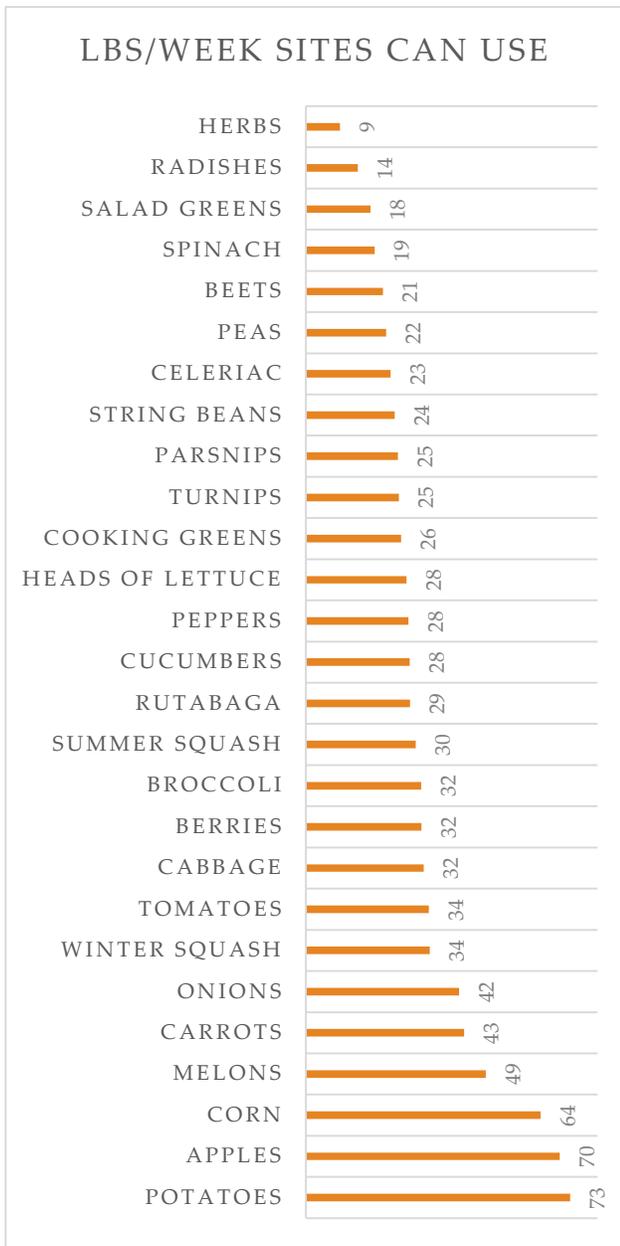
also interested in receiving preserved foods, including frozen, canned, dried, and dehydrated produce.

While it is clear that sites want a large volume of fresh produce, there are current challenges to fulfilling these needs. First, many sites are currently unable to acquire the amount of fresh produce that they want either because they lack adequate connections to donors or sufficient budgets for purchasing. Second, over one third of sites currently lack the capacity to manage the amount of fresh produce they want at their sites. Specifically, they need better infrastructure and more staff time. Even if sites were connected with all of the fresh produce they currently need, a sizable portion of sites would not be able to properly manage it.

Below, we explore each of these key findings in more detail. We end with a discussion of how sites' need for fresh produce can potentially be met.

High Demand

Sites around the state have a clear need for fresh produce: 90% of sites said that they



have a “very high” or “somewhat high” demand for fresh fruit and vegetables. On average, the sites that responded to the Fresh Produce Survey are able to use **620 pounds of fresh produce per week**. This amounts to **over 6.7 million pounds of fresh produce annually** for the 210 respondent sites.

¹ <http://www.foodpantries.org/st/vermont>

Since 58% of Vermont’s 152 food shelves¹ and 20% of Vermont’s 298 public schools² responded to the Fresh Produce Survey, we also generated an estimate of the annual statewide need for both types of sites. In total, **Vermont schools can use 7.7 million pounds of fresh produce, and Vermont’s food shelves can use 6.5 million pounds of fresh produce each year**. Taking into account the other organizations and institutions that serve or provide food as part of their social missions in Vermont, the total amount of fresh produce needed annually across the state is much larger.

Produce Preferences

In the Fresh Produce Survey, sites not only relayed *how much* fresh produce they would like to use, but also *what kinds* of fresh produce they would like to use. In this section we highlight a few key preferences that were shared by sites across Vermont.

Variety

Sites around the state have a strong interest in using a wide variety of fresh produce. More than 75% of sites said that they would like to serve or make available at their sites the following: apples, cucumbers, tomatoes, broccoli, melons, berries, onions, potatoes, and carrots. There is a broad appeal for most other types of vegetables, too.

² <http://www.vermont.gov/portal/education/index.php?id=199>

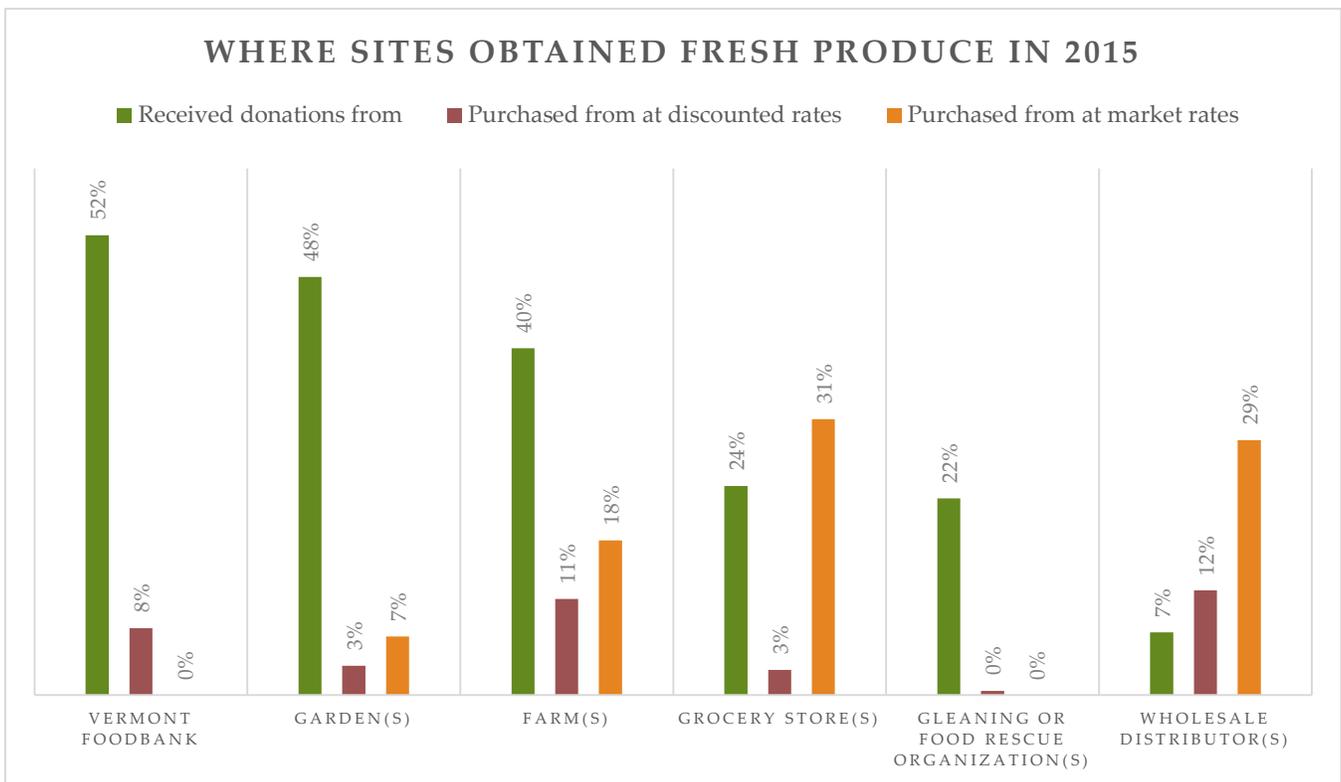
Vermont-Grown Produce

The majority of sites have a preference for using Vermont-grown fresh produce, with almost half of sites expressing a *strong* preference. Currently, sites obtain their fresh produce from a number of sources including the Vermont Foodbank, gardens, farms, grocery stores, gleaning/food rescue organizations, and wholesale distributors. The produce obtained from the Vermont Foodbank, grocery stores, and wholesale distributors, however, may come from outside of the state. We can only be sure that the produce sites obtain from gardens, farms, and gleaning/food rescue organizations is 100% Vermont-grown. We see, however, that despite sites' preference for Vermont-grown produce, only a small

number reported purchasing fresh produce directly from farms or gardens. In addition, fewer than half of sites received donations from farms or gardens, and fewer than a quarter of sites received donations from gleaning/food rescue organizations. Therefore, while most sites have a preference for Vermont-grown produce, only a small portion are receiving it.

Preserved Produce

Most sites expressed interest in receiving fresh produce that has been frozen. Almost half of sites are also interested in using fresh produce that has been canned, dried, or dehydrated. Since these sites have a year round need for fresh produce, and yet Vermont's growing season is so short,



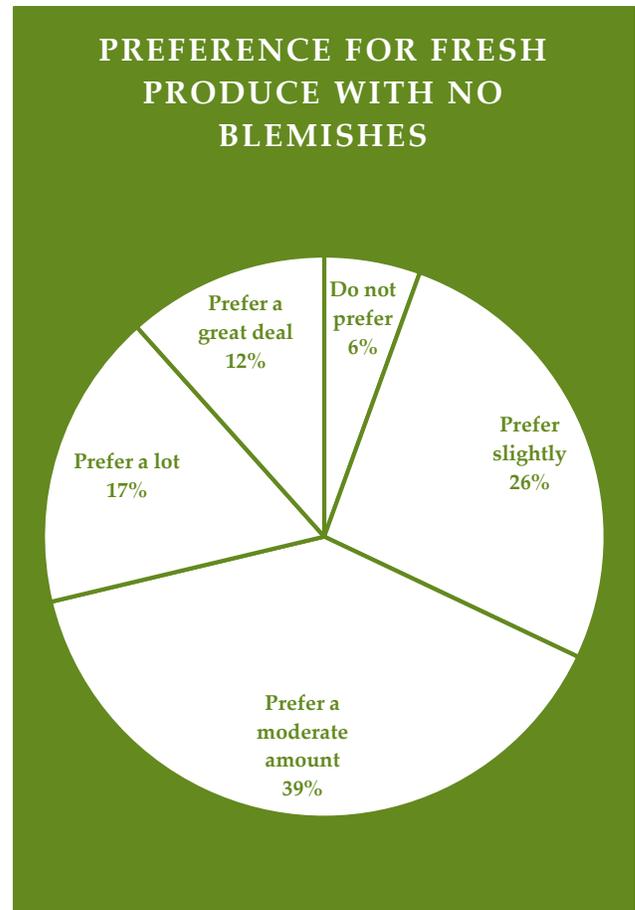
having access to preserved fresh produce would enable them to have wholesome, Vermont-grown produce, all year long. A key challenge for Vermont’s food system, however, is finding the labor, equipment, and other resources needed to preserve fresh produce.

“Good-Looking” Produce

Most sites reported a preference for fresh produce with no blemishes – i.e. that “look good.” While this “ugly produce” may look different in terms of size, shape, or color, it is as wholesome as traditionally marketed produce. In addition, ugly produce is often sold at discounted prices. Since many sites, however, have expressed a preference for unblemished produce, providing client and site education on the benefits of ugly produce could be explored. Through normalizing its usage, sites may be more amenable to using it. Alternatively, since sites are interested in using preserved produce, the ugly product could instead be minimally processed and frozen, canned, dehydrated, or dried. By minimally processing ugly produce - such as taking undesirable corn and freezing the kernels - sites would be able to satisfy their preference for a good-looking product and preserved produce at once.

Challenges to Growth

Sites across Vermont have a clear need for fresh produce. There are two main challenges that sites face, however, in



meeting their needs: being able to actually acquire the amount of fresh produce they would use, and being able to adequately manage that amount at their sites. Therefore, while 84% of sites report wanting to increase the amount of fresh produce that they serve or make available, the challenges preventing sites from doing so now need to be addressed.

Limitations to Acquiring the Fresh Produce

Sites are often unable to acquire the amount of fresh produce that they want, either because they lack adequate connections to donors or sufficient budgets for purchasing fresh produce.

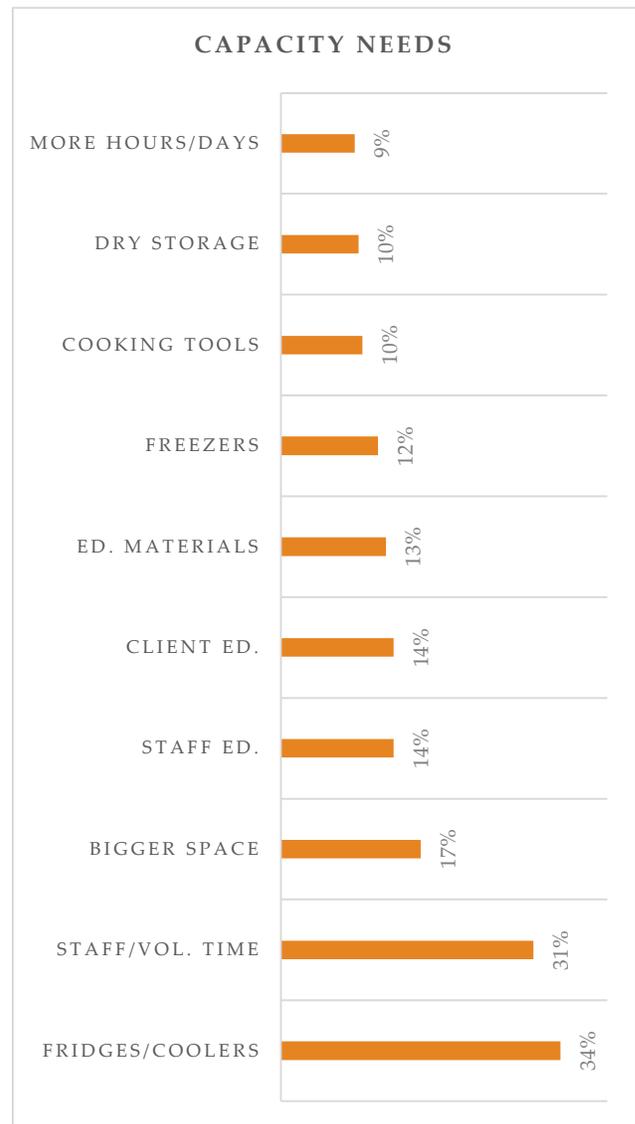
In 2015, one-third of sites did not receive fresh produce donations. A full 60% of these sites said this was due to *no one having offered to donate fresh produce to them*. Sites unanimously note, however, their own interest and their clients' interest in using donated fresh produce. It is therefore a lack of connections – not a lack of interest – that leads sites to miss out on fresh produce donations.

In terms of purchasing fresh produce, the reality is that most sites have tight budgets, and few have access to markets that sell fresh produce at discounted prices. Indeed, only 27% of sites purchased any amount of fresh produce at discounted prices in 2015. To attempt to meet their need, these sites were reliant on donations and/or purchasing fresh produce at full price. As a result, they often did not have as much fresh produce as they would like to serve and make available at their sites.

Sites either need access to more donations and/or to markets where their limited budgets can be stretched to purchase the most amount of fresh produce. In these ways, sites can acquire the amount of fresh produce that they need.

Limitations to Managing the Fresh Produce

Even if sites were able to acquire the amount of fresh produce needed, almost half of sites currently lack the capacity to adequately manage it. The main reasons include infrastructure and staffing constraints.



Indeed, a full one-third of sites report needing refrigerators or coolers, and one-fifth of sites report needing bigger spaces or facilities. An additional third said that they needed more staff or volunteer time in order to absorb additional fresh produce. Relatedly, while sites did not cite transportation as a limitation *per se* in receiving more produce, they did express a strong preference for produce to be cleaned and delivered to their location. Both of these steps also necessitate additional labor and

resources. In order for sites to be able to absorb the amount of fresh produce they would like, sites need more staff and better infrastructure.

Planting a Future

Housing sites, prisons, Meals on Wheels, food shelves, schools, and other organizations and institutions around Vermont have a very high demand for fresh produce. Schools and food shelves alone could use approximately 14 million pounds each year. This figure is particularly interesting in light of the estimated 14.3 million pounds of vegetables and berries that are lost in Vermont each year³. This similar volume, however coincidental, serves to highlight the question of whether sites' fresh produce needs can be met by accessing this food loss. In addition to its volume, Vermont's food loss fulfills many of sites' other preferences for fresh produce. For example, food loss encompasses a wide variety of produce, and is food that is grown in Vermont. A substantive portion of food

loss, however, is considered "ugly", which sites generally are not interested in using. Through freezing, canning, and otherwise preserving this ugly produce, though, sites may be more amenable to using it. Alternatively, sites and their clients may also become more inclined to use ugly produce after receiving outreach education on its benefits and uses.

Further research is needed to determine how producers and suppliers would be able to make Vermont's food loss available to sites. In particular, research is needed to determine the prices at which producers and suppliers would be willing to sell their food loss, and whether schools, food shelves, and others would be willing to purchase it at those prices. The costs of preserving and delivering foods also need to be included in any analysis.

There is much to do to meet sites' fresh produce needs. Exploring ways in which Vermont's food loss can help do so is a promising area moving forward.

³http://salvationfarms.org/VT_Food_Loss_Study_2016.pdf

Fresh Produce Survey Responses

Table 1. Types of sites that filled out the Fresh Produce Survey

	Number of Respondents	Percent of Respondents
Food shelf/pantry	88	42%
School	59	28%
Elder site	25	12%
Pre-school & Daycare	13	6%
Homeless shelter	9	4%
Meal Site	9	4%
Youth feeding site	9	4%
Soup kitchen	7	3%
Meals on Wheels	5	2%
Senior Housing	5	2%
Affordable Housing	4	2%
Prison	4	2%
Community Action Agency	3	1%
Hospital	3	1%
Domestic Violence Service	2	1%
Faith-based site	2	1%
Residential Rehabilitation Center	2	1%
Social Work Agency	2	1%

*Sites were able to choose more than one category, so column total is more than 210

Table 2. Respondents, by county

	Number of Respondents	Percent of Respondents
Addison County	6	3%
Bennington County	19	9%
Caledonia County	18	9%
Chittenden County	26	12%
Essex County	4	2%
Franklin County	15	7%
Grand Isle County	1	0%
Lamoille County	6	3%
Orange County	8	4%
Orleans County	13	6%
Rutland County	15	7%
Washington County	34	16%
Windham County	21	10%
Windsor County	21	10%

Table 3. Sites that received donated fresh produce in 2015

	Number of Respondents	Percent of Respondents
Did not receive donated fresh produce	58	28%
Did receive donated fresh produce	152	72%
Total	210	100%

Table 4. Where sites received donated fresh produce from in 2015

	Number of Respondents	Percent of Donation Recipient Sites
Vermont Foodbank	110	72%
Garden(s)	100	66%
Farm(s)	83	55%
Grocery store(s)	50	33%
Gleaning or food rescue site(s)	47	31%
Wholesale distributor(s)	15	10%
Other Donor(s)	4	3%
DoD Fresh	1	1%

Table 5. Sites that had clients pay for donated fresh produce

	Number of Respondents	Percent of Donation Recipient Site Respondents
No	135	91%
Sometimes	10	7%
Yes	4	3%
Total	149	100%

Table 6. Reasons sites did not receive donated fresh produce in 2015

	Number of Respondents	Percent of Non-Donation Recipient Sites	Percent of Respondents
No one offered to donate fresh produce	35	60%	17%
Site purchased all fresh produce	22	38%	10%
Other	8	14%	4%
Not enough storage for fresh produce	6	10%	3%
Too difficult to use/distribute before spoiled	4	7%	2%
Did not like past variety had received	2	3%	1%
Did not like past quality had received	2	3%	1%
Did not like not knowing what would receive	2	3%	1%
Difficult for staff/volunteers to manage	1	2%	0%
Did not want donated fresh produce	0	0%	0%
Clients were not interested in fresh produce	0	0%	0%

Table 7. What sites did with the donated fresh produce

	Number of Respondents	Percent of Donation Recipient Sites	Percent of Respondents
Distributed or served	108	71%	51%
Cleaned, then distributed or served	67	44%	32%
Cooked, then distributed or served	66	43%	31%
Froze, then distributed or served	43	28%	20%
Packaged, then distributed or served	42	28%	20%
Other	5	3%	2%
Canned, then distributed or served	3	2%	1%
Dried, then distributed or served	0	0%	0%

Table 8. Quality of the fresh produce that sites received

	Number of Respondents	Average Quality Score (Out of 5)	Std. Dev.	Minimum Quality Score	Maximum Quality Score
Fresh Produce Quality	133	4.01	0.74	2	5

Table 9. Sites that purchased fresh produce at a discounted rate in 2015

	Number of Respondents	Percent of Respondents
Did not purchase	146	73%
Did purchase	55	27%
Total	201	100%

Table 10. Where sites purchased fresh produce at discounted rates in 2015

	Number of Respondents	Percent of Respondents
Wholesale distributor	25	12%
Farm(s)	23	11%
Vermont Foodbank	16	8%
Local garden(s)	7	3%
Grocery store(s)	6	3%
CSA(s)	3	1%
DoD Fresh	2	1%
Gleaning/Food Rescue	1	0%
Other	1	0%

Table 11. Sites that purchased fresh produce at a market rate in 2015

	Number of Respondents	Percent of Respondents
Did not purchase	81	42%
Did purchase	112	58%
Total	193	100%

Table 12. Where sites purchased fresh produce at market rates in 2015

	Number of Respondents	Percent of Respondents
Farm(s)	37	20%
Wholesale distributor	61	33%
Grocery store(s)	66	36%
Local garden(s)	14	8%
CSA(s)	5	3%
Total	183	100%

Table 13. Whether sites purchased less fresh produce in 2015 due to having received donated fresh produce

	Number of Respondents	Percent of Respondents
Definitely not	6	8%
Probably not	15	21%
Might or might not	5	7%
Probably yes	13	18%
Definitely yes	34	47%
Total	73	100%

Table 14. Sites' demand for fresh fruit

	Number of Respondents	Percent of Respondents
Very low	1	1%
Somewhat low	0	0%
Neither high nor low	16	8%
Somewhat high	44	22%
Very high	136	69%
Total	197	100%

Table 15. Sites' demand for fresh vegetables

	Number of Respondents	Percent of Respondents
Very low	0	0%
Somewhat low	2	1%
Neither high nor low	18	9%
Somewhat high	52	27%
Very high	123	63%
Total	195	100%

Table 16. Sites that want to change the amount of fresh produce that they serve or make available

	Number of Respondents	Percent of Respondents
Do not want to increase	13	7%
Unsure if want to increase	22	11%
Do want to increase	163	84%
Total	193	100%

Table 17. Sites with the capacity to increase the amount of fresh produce that they could receive beginning in 2016

	Number of Respondents	Percent of Respondents
No	26	13%
Unsure	55	28%
Yes	117	59%
Total	198	100%

Table 18. Access to storage options

	Number of Respondents	Percent of Respondents
Standard refrigerator	132	63%
Standing freezer	109	52%
Chest freezer	99	47%
Combination refrigerator/freezer	77	37%
Walkin refrigerator	57	27%
Glassfront refrigerator	26	12%
Walk-in Freezer	22	10%
Root cellar	8	4%
Coolbot	6	3%
Other Type	3	1%
Glass Freezer	1	0%

Table 19. What sites need to increase their capacity to serve or make available donated fresh produce

	Number of Respondents	Percent of Respondents
Refrigerators and coolers	72	34%
Additional staff or volunteer time	65	31%
Bigger space/facility	36	17%
Staff or volunteer education	29	14%
Client education	29	14%
Access to educational materials	27	13%
Freezers	25	12%
Cooking equipment or tools	21	10%
Dry storage	20	10%
Increased hours/days of distribution	19	9%

Table 20. Types of donated produce that sites would like to receive

	Number of Respondents	Percent of Respondents
Apples	176	84%
Cucumbers	170	81%
Tomatoes	167	80%
Broccoli	166	79%
Melons	163	78%
Berries	162	77%
Onions	162	77%
Potatoes	161	77%
Carrots	160	76%
Head Lettuce	155	74%
Peppers	154	73%
Summer Squash	145	69%
Corn	142	68%
Salad Greens	141	67%
String Beans	141	67%
Mixed Roots	133	63%
Spinach	133	63%
Winter Squash	130	62%
Peas	128	61%
Cabbage	123	59%
Herbs	119	57%
Beets	117	56%
Radishes	105	50%
Greens	102	49%
Parsnips	93	44%
Turnips	87	41%
Rutabaga	80	38%
Celeriac	51	24%
Other	12	6%

Table 21. Number of pounds sites could use of produce per week

	Number of Respondents	Average Number of Pounds	Std. Dev.	Minimum Number of Pounds	Maximum Number of Pounds
Apples	106	70	142.29	2	1200
Beets	76	21	24.47	1	125
Berries	94	32	48.90	1	300
Broccoli	95	32	55.55	1	400
Cabbage	68	33	48.74	2	300
Carrots	98	43	72.79	1	500
Celeriac	25	26	32.52	1	125
Cooking Greens	58	27	34.67	1	150
Corn	72	64	125.56	1	700
Cucumbers	100	28	49.21	1	300
Heads of Lettuce	81	28	48.45	1	300
Herbs	66	9	18.28	0.5	125
Melons	87	49	140.92	2	1251
Onions	95	42	76.14	1	500
Parsnips	57	26	46.70	1	300
Peas	75	22	40.56	1	300
Peppers	92	28	51.30	1	300
Potatoes	95	73	111.80	3	600
Radishes	63	14	30.01	0.5	200
Rutabaga	43	29	53.62	1	300
Salad Greens	80	18	27.45	1	150
Spinach	80	19	33.99	1	200
String Beans	84	24	42.73	1	300
Summer Squash	87	30	44.42	1	300
Tomatoes	102	34	56.17	1	400
Turnips	49	26	47.49	1	300
Winter Squash	76	34	46.54	1	300
TOTAL	116	621	1077	13	7000

Table 22. Total number of pounds respondents said that they could use of donated produce each week

	Total Number of Pounds
Apples	7385.5
Beets	1625
Berries	2984
Broccoli	3002
Cabbage	2261
Carrots	4255
Celeriac	651
Cooking Greens	1542
Corn	4636
Cucumbers	2846.5
Heads of Lettuce	2238
Herbs	626.5
Melons	4296
Onions	3996
Parsnips	1466
Peas	1652
Peppers	2590
Potatoes	6892
Radishes	895.5
Rutabaga	1257
Salad Greens	1417
Spinach	1525
String Beans	2049
Summer Squash	2620
Tomatoes	3438
Turnips	1274
Winter Squash	2615

Table 23. Delivery preference

	Number of Respondents	Percent of Respondents
Preference for produce to be delivered	126	68%
Preference to pick up the produce	14	8%
No preference	46	25%
Total	186	100%

Table 24. Delivery day/time preference

	Number of Respondents	Percent of Respondents
Do not prefer	15	12%
Prefer slightly	21	17%
Prefer a moderate amount	26	21%
Prefer a lot	32	26%
Prefer a great deal	30	24%
Total	124	100%

Table 25. Pickup day/time preference

	Number of Respondents	Percent of Respondents
Do not prefer	1	7%
Prefer slightly	4	29%
Prefer a moderate amount	3	21%
Prefer a lot	4	29%
Prefer a great deal	2	14%
Total	14	100%

Table 26. Distance sites are able to travel to pick up donated fresh produce

	Number of Respondents	Average Number of Miles	Std. Dev.	Minimum Number of Miles	Maximum Number of Miles
Miles	13	16.92	11.64	5	50

Table 27. Preference for donated fresh produce to be cleaned prior to delivery or pickup

	Number of Respondents	Percent of Respondents
No preference	59	32%
Prefer uncleaned crops	1	1%
Yes, depends on crop	73	40%
Yes, for all crops	51	28%
Total	184	100%

Table 28. Importance of being able to choose specific fruits and vegetables that receive

	Number of Respondents	Percent of Respondents
Very unimportant	17	9%
Somewhat unimportant	35	19%
Neither unimportant nor important	34	19%
Somewhat important	67	37%
Very important	30	16%
Total	183	100%

Table 29. Importance of being able to choose the amount of fresh produce donated each week

	Number of Respondents	Percent of Respondents
Very unimportant	16	9%
Somewhat unimportant	25	14%
Neither unimportant nor important	19	10%
Somewhat important	68	38%
Very important	53	29%
Total	181	100%

Table 30. Interest in receiving processed fresh produce

	Number of Respondents	Percent of Respondents
Fresh produce that has been frozen	151	72%
Fresh produce that has been canned	105	50%
Fresh produce that has been dried	94	45%
Fresh produce that has been dehydrated	85	40%

Table 31. Preference of where fresh produce is coming from

	Specific Farm that Know	County	Vermont	Gleaning or Food Rescue Initiative
Do not prefer	91	91	46	64
Prefer slightly	24	29	20	28
Prefer a moderate amount	25	22	29	33
Prefer a lot	19	14	43	22
Prefer a great deal	15	10	38	21
Total	174	166	176	168

Table 32. Preference of where fresh produce is coming from

	Specific Farm that Know	County	Vermont	Gleaning or Food Rescue Initiative
Do not prefer	52%	55%	26%	38%
Prefer slightly	14%	17%	11%	17%
Prefer a moderate amount	14%	13%	16%	20%
Prefer a lot	11%	8%	24%	13%
Prefer a great deal	9%	6%	22%	13%
Total	100%	100%	100%	100%

Table 33. Preference for fresh produce that have no blemishes (i.e. that "look good")

	Number of Respondents	Percent of Respondents
Do not prefer	10	6%
Prefer slightly	48	27%
Prefer a moderate amount	71	39%
Prefer a lot	31	17%
Prefer a great deal	21	12%
Total	181	100%

Table 34. Pounds of donated fresh produce received in 2015

	Number of Respondents	Mean	Std. Dev.	Min	Max
Pounds of Donated Fresh Produce Received	73	2194.10	1767.30	51	5000

Table 35. Market value of donated fresh produce received in 2015

	Number of Respondents	Mean	Std. Dev.	Min	Max
Dollar Amount of Donated Fresh Produce Received	36	\$12,543	\$14,685	\$-	\$50,000

Table 36. Items purchased with savings from having received donated fresh produce in 2015

	Number of Respondents	Percent of Respondents
More local fresh produce	19	13%
Other local farm-produced products (i.e. cheese, milk, etc.)	27	18%
Unsure	41	27%
Nothing	23	15%
Other	42	28%
Total	152	100%

Appendix A. Annual Donated Fresh Produce Poundage Estimates for Schools and Food Shelves in Vermont

Table 1. Summary Statistics of **Weekly** Donated Fresh Produce Poundage Needs

	Observations	Mean	Std. Dev.	Min	Max
Schools	34	501.2	617.3	29	2340
Food Shelves	46	826.9457	1436.564	40	7000

Table 2. Confidence Intervals, **Weekly** Donated Fresh Produce Poundage Needs

	Margin of error	Lower Bound of Confidence Interval	Mean Farmer Estimate	Upper Bound of Confidence Interval
Schools	207.5	293.7	501.2	708.7
Food Shelves	415.1	411.8	826.9	1242.1

Based on there being 152 food shelves in Vermont: <http://www.foodpantries.org/st/vermont>

Based on there being 298 public schools in Vermont: <http://www.vermont.gov/portal/education/index.php?id=199>

Table 3. **Annual** Donated Fresh Produce Poundage Need Estimates

	Low Estimate of Annual Lbs	Mean Estimate of Annual Lbs	High Estimate of Annual Lbs
Schools	4,550,823	7,766,231	10,981,639
Food Shelves	3,254,855	6,536,179	9,817,502
Total	7,805,678	14,302,410	20,799,141